Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Reliability and Continuity of Communications Networks, Including Broadband Technologies	)	PS Docket No. 11-60
	)	
Effects on Broadband Communications Networks of Damage or Failure of Network Equipment or Severe Overload	)	PS Docket No. 10-92
	)	
Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks	)	EB Docket No. 06-119

COMMENTS OF
PCIA—THE WIRELESS INFRASTRUCTURE ASSOCIATION
AND
THE DAS FORUM, A MEMBERSHIP SECTION OF PCIA

I. INTRODUCTION

PCIA—The Wireless Infrastructure Association ("PCIA")[1] and The DAS Forum, a membership section of PCIA ("The DAS Forum")[2] respectfully submit these reply comments in response to the Federal Communications Commission's ("FCC" or "Commission") *Notice of Inquiry* seeking comment on the reliability and resiliency of our Nation's communications networks.[3]

[1] PCIA is the national trade association representing the wireless telecommunications infrastructure industry. PCIA's members own and manage more than 125,000 telecommunications towers and antenna structures across the country upon which cell sites can be collocated. PCIA seeks to facilitate the widespread deployment of communications networks across the country, consistent with the mandate of the Telecommunications Act of 1996.

[2] The DAS Forum, a membership section of PCIA, is dedicated to the development of distributed antenna systems ("DAS") as an element of the nation's wireless infrastructure. The DAS Forum's membership includes virtually every major neutral host outdoor and indoor DAS provider, as well as manufacturers of equipment used in the wireless service sectors, and several commercial mobile radio service carriers currently deploying DAS as part of their networks.

[3] Reliability and Continuity of Communications Networks, Including Broadband Technologies, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, *Notice of Inquiry*, 26 FCC Rcd 5614 (2011) ("NOI").

PCIA and The DAS Forum urge the Commission not to enact regulation requiring backup power. No regulatory regime can account for the rapid pace of technological advances or the diversity of wireless infrastructure solutions utilized in wireless networks. Those who design, install and maintain the networks are better equipped to efficiently channel finite resources into increasing resiliency. The Commission should allow the architects of wireless networks to use their expertise to ensure resiliency of networks and continuity of service.

Wireless networks and the infrastructure these networks rely on are inherently complex and diverse making constructive regulation impractical. However, should the Commission decide to implement regulations or best practices, PCIA and The DAS Forum urge the FCC to account for this complexity and diversity in the implementation of any standards or best practices for the use of backup power in wireless facilities.

The wireless infrastructure industry is highly incentivized by existing market forces to increase the reliability of wireless networks. As part of the process of building out nationwide wireless networks, carriers and infrastructure providers must carefully account for diverse regulatory regimes from local, state, and federal governments in the placement of wireless facilities. The use of backup power can drastically change the availability of sites for new facilities and opportunities for collocation on existing facilities. Furthermore, any backup power standards or best practices must be compatible with the very diverse infrastructure and cell site solutions that carriers rely upon to provide effective coverage and capacity in a variety of challenging local environments.

II. REGULATIONS ARE NOT NECESSARY TO PROVIDE CONTINUITY AND RELIABILITY FOR WIRELESS NETWORKS

A. The Wireless Infrastructure Industry is Incentivized to Provide Innovative and Reliable Service through Existing Market Forces

As more Americans terminate their landline telephony service in favor of mobile devices and the adoption of cloud-based computing services continues to increase, consumer needs and expectations for greater coverage, speed and reliability of wireless services intensifies. Existing industry "[c]ompetition and market forces drive the private sector to innovate in ways designed to improve network reliability and recovery."[4] In order to be successful in this environment a communications company must "develop and maintain their reputation[] for having reliable networks and for responding quickly to network outages due to natural disasters and other causes."[5]

As AT&T and others stated in their initial comments, an offline network cannot draw revenue and provider's reputation will suffer resulting in a loss of customers.[6] Quite simply, a reliable network is essential for success in the marketplace and is an extremely powerful incentive driving wireless broadband providers to strengthen their networks. [7] Accordingly, "today's communications are extremely robust and service providers are constantly investing and innovating to improve them in this respect—without prescriptive regulations, laws or rules requiring them to do so."[8] There is no need for a market correction here because "[n]o Commission action would provide a company with greater incentive to maintain a reliable and

[4] *See* Comments of AT&T Services, Inc., PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 3 (filed July 7, 2011) ("AT&T Comments").
[5] *See id.* at 3.
[6] *Id*. at 4; Comments of The Alliance for Telecommunications Industry Solutions, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at i (filed July 7, 2011) ("AAIS Comments"); Comments of CenturyLink, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 1 (filed July 7, 2011) ("CenturyLink Comments").
[7] *See* AT&T Comments at 4.
[8] *Id*.

resilient communications network than its desire to succeed in a competitive marketplace by retaining customers."[9]

Carriers are incentivized to provide the highest level of service to their customers, therefore neutral host providers must make available high levels of service to attract and retain the carriers that are hosted on their infrastructure. The ability to facilitate the implementation of backup power to service providers at key sites is a competitive advantage and one that will foster continuity of service and resilience independent of unnecessary regulation. Constructing sites that can accommodate continuity measures such as backhaul redundancies and backup power makes a site more appealing to carriers.

B. The Complexity of Wireless Network Infrastructure Makes Effective Regulation Intractable

The "intrinsic complexity of wireless networks and the infrastructure upon which [wireless] networks rely" makes effective regulation difficult if not impossible.[10] Because of the various infrastructure models in place and working together, including traditional towers, distributed antenna systems ("DAS") and rooftop facilities, "[t]he private sector requires flexibility to address the differing challenges of ensuring network reliability and continuity of service."[11] A standard technical solution is incompatible with the fluid and evolving nature of network reliability solutions in this healthy networked ecosystem.[12]

PCIA and The DAS Forum agree with AT&T when it writes that, "[t]here is no one right way to design, construct, and operate a reliable, resilient network that is capable of withstanding significant damage with only a minimal service disruption and that can quickly recover from

[9] *See* CenturyLink Comments at 1.
[10] *See* Comments of PCIA—The Wireless Infrastructure Association and The DAS Forum, a Membership Section of PCIA, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 2 (filed July 7, 2011) ("PCIA and The DAS Forum Comments").
[11] *See* AT&T Comments at 13.
[12] *Id.*

outages."[13] The wireless industry requires "significant flexibility to ensure that network design decisions are appropriate for the circumstances and conditions at hand, and not by reference to external guidelines that may be irrelevant or even counterproductive."[14]

Some commenters, like Generac Power Systems ("Generac"), Oncor Electric Delivery Company and Edison Electric Institute ("Edison"), call for specific technical solutions or a strict set of regulations. However, no set of regulations will "withstand every possible source of failure"[15] and would stifle innovation of new approaches to improve reliability and continuity. To enact inflexible regulations could lead to the waste of limited resources and create unnecessary redundancies in some network areas, to the detriment of others.[16]

Generac for instance states a preference for on-site backup power, and even cites a preferred fuel, propane.[17] Such partialities do not account for the variety of infrastructure that makes up the wireless broadband network. Many siting provisions have caps on emission and noise levels as well as restrictions on the size of the installation itself. [18] To change these sites to add new on-site backup power would raise many complex issues regarding federal, state and local laws.[19] Additionally, in an example of just how complex this issue is, while Generac states a preference for propane as a fuel source, the Occupational Safety and Health Administration ("OSHA") requires that "[n]o combustible material shall be stored outdoors within ten feet of a

[13] *See* AT&T Comments 13.
[14] *Id*.
[15] *See* AAIS Comments at i; Comments of the Telecommunications Industry Association, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 4 (filed July 7, 2011) ("TIA Comments").
[16] *See* AT&T Comments at 19.
[17] *See* Comments of Generac Power Systems, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 5-6 (filed July 7, 2011) ("Generac Comments").
[18] PCIA and The DAS Forum Comments at 5.
[19] *Id*.

building or structure."[20] Therefore, many existing telecommunication facilities would not have the space available to facilitate the addition of a propane source.

Edison in turn states that service reliability of commercial networks must be assessed with a focus on individual aspects of networked hardware.[21] This micromanaged approach to a fluid IP-based network is shortsighted. Furthermore, it is an inefficient use of industry resources as the nation looks to further broadband deployment.[22] The Commission must not lose sight of the forest for the trees when considering the macro issue of reliability. To "impose[] regulations or federal standards on only one part of the ecosystem will increase costs and hardship on certain actors while leaving others unregulated, and will not have a meaningful impact on overall reliability of communications networks."[23]

The Commission must understand that mandatory backup power for DAS Nodes is impossible. To arbitrarily require backup power for all of the thousands of Nodes in place and under development would be cost prohibitive. Additionally, a mandate of this type could compromise network performance, preventing the construction of, and requiring the removal of, critically located DAS Nodes that simply cannot be equipped with long-term battery backups. In many cases there is inadequate capacity on the utility poles or light posts that these devices are installed on to facilitate backup power, and "even if possible from an engineering standpoint, many other rules and regulations, such as local right-of-way and zoning codes, as well as

[20] 29 C.F.R. § 1926.151(c)(5) (2010); The National Fire Protection Association ("NFPA") has issued model fire safety regulations for battery storage that could also adversely affect the use of backup power. *See* NFPA Standards for the Fire Protection of Telecommunications Facilities (2009). *See also* NFPA § 70: National Electrical Code, Art. 480 (defining requirements for battery storage); International Fire Code § 608 (Stationary Storage Battery Systems).
[21] *See* Comments of Edison Electric Institute, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 6 (filed July 7, 2011) ("Edison Comments").
[22] *See* CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN, at xiv (Mar. 2010) ("National Broadband Plan").
[23] *See* AT&T at 18.

environmental and hazardous materials regulations, would make it difficult . . . to obtain approval."[24]

C. Local Issues and Authority Unique to Wireless Infrastructure Affect the Use of Backup Power

The infrastructure that supports today's wireless networks is extremely diverse, including traditional towers, indoor and outdoor DAS networks, rooftops and concealed support structures.[25] When building out infrastructure, the wireless industry must navigate the complex course of addressing the interests and concerns of the local residents, comply with numerous state and local regulations and determine the best approach to meet a varied set of geographic, climactic, structural, technological and business factors.[26] Because of the variety of the types of infrastructure in use, and in order to meet the needs of different communities, any one-size-fits-all approach with regards to backup power is unrealistic and impractical.

Geographic concerns are paramount when deciding where to place wireless infrastructure. For example, "[w]ireless carriers often tailor their network resiliency and continuity of service plans to the unique needs of individual localities and the likely disasters experienced in different areas."[27] The variety of natural variables and challenges makes any one-size-fits-all backup power solution ineffective and, in some situations, counterproductive.

Any regulation of service providers will ultimately affect neutral host infrastructure providers and the critical role they play in the build out of advanced telecommunications

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[24] *See* NextG Networks, Inc., PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, 1-2 (filed July 7, 2011) ("NextG Comments").

[25] Concealed support systems come in a multitude of designs to match area surroundings including mono-palm, flagpole, mono-pine, boulder, building mounted and bell tower solutions. These special installations have special design specific constraints that can make backup power accommodation even more difficult.

[26] *See* AT&T Comments at 1.

[27] *See* Comments of CTIA – The Wireless Association®, PS Docket Nos. 11-60, 10-92, EB Docket No. 06-119, at 5-6 (filed July 7, 2011) ("CTIA Comments").

services. Understanding the importance of this issue, many states have enacted continuity of service rules and backup power rules that account for unique characteristics of a given state. To adopt rules in this proceeding, "the Commission may create conflicts or require changes that unnecessarily divert resources from other needed activities."[28] Conflicts with the various local governments are even harder to predict. "[F]or instance, most local government zoning ordinances allow cities to reject placement of communications equipment in rights of way for discretionary aesthetic reasons, which large backup power boxes (either pole mounted or mounted on the ground next to the poles) would almost certainly violate."[29]

NextG Networks Inc. cites a City of New York regulation that would permit equipment boxes that are only thirteen inches by nine inches by four inches and concludes that it would be impossible for *anyone* to install backup power equipment in the public rights of way that meet the parameters of the regulation.[30] Other local governments limit the space that can be used to house a battery cabinet or backup power source to twenty-five percent or less of the total surface of a rooftop.[31] Examples such as these showcase the hurdles that the infrastructure industry must clear in order to build out in the first place and provide a glimpse of the problems a hard-lined set of regulations would create.

III. CONCLUSION

For the foregoing reasons, PCIA and The DAS Forum urge the Commission not to enact regulations regarding backup power in this proceeding. We ask that the Commission carefully consider the intrinsic complexity of wireless networks and the diversity in infrastructure and

[28] *See* CenturyLink Comments at 19.
[29] *See* NextG Comments at 8-9; *See, e.g.,* Sprint Telephony PCS, L.P. v County of San Diego, 543 F.3d 571 (9th Cir. 2007).
[30] *See* NextG Comments at 9.
[31] *See, e.g.*, MONTGOMERY COUNTY,MD, CODE § 59-A-6.14(a)(5) (2011); FAIRFAX COUNTY, VA, ZONING ORDINANCE § 2-5141.J (2011).

wireless solutions upon which service providers rely to provide effective coverage and capacity in its consideration of any standards or best practices for the use of backup power in wireless facilities.

Respectfully submitted,

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